AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method of food product testing, such method including the steps of

selecting a sample of a food product having at least one known organoleptic property;

preparing the sample for assay;

assaying the sample to generate a microbial profile, wherein the assay comprises the step of hybridizing genomic material in the sample to a probe matrix having nucleic acid obtained from a plurality of target species of microorganisms;

forming an output distribution representative of the microbial profile of the sample;

storing the output distribution in a database;

storing ~~information related to~~ a sample profile containing data for the at least one known organoleptic property of the sample in the database; and

~~mining the database to correlate~~ correlating the output distribution with the at least one known organoleptic property, such that the presence of the at least one known organoleptic property can be predicted in [[a]] another sample of the food product by comparing [[the]] its microbial profile ~~of the food product~~ to the database.

2. (Currently amended) The method of claim 1, wherein the step of preparing includes the step of culturing the food sample to increase populations of a plurality of the target species prior to testing with the probe matrix ~~array of probes~~.

3. (Original) The method of claim 2, wherein the step of preparing includes the steps of

extracting nucleic acid from target organisms, and

labeling and amplification of gene regions prior to detection with the probe array.

4. (Original) The method of claim 3, wherein the step of labeling is performed after the step of amplification.

5. (Currently amended) The method of claim 3, wherein the step of amplification is performed by automated fluidics and incubation to produce output material for detection by the probe matrix ~~said array~~.

6. (Previously presented) The method of claim 1, wherein the steps of preparing and assaying further comprise utilizing an automated sample preparation and array testing system.

7. (Canceled).

8. (Previously presented) The method of claim 1, wherein the step of preparing the sample includes the steps of recovering a plurality of different microorganisms from the food sample, extracting nucleic acids from the plural different microorganisms, and simultaneously amplifying plural target sequences present in the recovered nucleic acids for each of said different microorganisms.

9. (Currently amended) The method of claim 1, further comprising the step of ~~mining the database wherein the database includes~~ storing in the database data of at least one type selected from among

(i) other output distributions,

(ii) parameters related to the source, condition or processing of food in the sample from which the output distribution was taken, and

(iii) parameters related to the source, condition or processing of food in the sample from which other output distributions were taken.

Claims 10-13. (Canceled).

14. (Currently amended) A testing method for food quality and processing comprising the steps of

selecting a sample of a food product having at least one known organoleptic property;

preparing an array having a plurality of probes, each probe being directed to gene sequences from a plurality of different target species of organisms;

preparing a sample of the food product, wherein the step of preparing a sample includes extracting nucleic acids from the sample;

amplifying the extracted nucleic acids such that target sequences are preferentially amplified;

hybridizing the amplified nucleic acids to the probes on the array;

forming an output distribution representative of the plurality of target species of organisms present in the sample;

storing the output distribution and information related to the at least one known organoleptic property of the sample in a database; and

~~mining the database to correlate~~ correlating the output distribution with the at least one known organoleptic property such that the presence of the at least one known organoleptic property can be predicted in [[a]] another sample of the food product by comparing [[the]] its output distribution ~~of the food product~~ to the database.

15. (Canceled).

16. (Canceled).

17. (Previously presented) The testing method of claim 14, wherein the species are foodborne species affecting food quality.

18. (Original) The testing method of claim 14, wherein the target sequences include species sequences coding for factors involved in pathogenesis or virulence factors.

19. (Previously presented) The testing method of claim 14, wherein the target sequences are species sequences selected for efficient amplification as a group.

20. (Original) The testing method of claim 14, wherein the array tests for a palette of species selected from among product colonizing species, environment colonizing species, and mammalian colonizing species.

21. (Previously presented) The testing method of claim 16, further comprising the step of displaying the distribution with a note describing adverse consequences or process warning indications associated with the detected distribution.

22. (Canceled).

23. (Previously presented) The testing method of claim 14, wherein the target sequences are species sequences selected for efficient probe hybridization and detection as a group.

24. (Previously presented) The testing method of claim 14, further including the steps of determining sensitivity and cross reactivity of the array.

25. (Previously presented) The testing method of claim 14, wherein the output distribution indicates the quantity of each target species present in the sample.

26. (Previously presented) The method of claim 1, wherein the at least one known organoleptic property is selected from the group consisting of smell, texture, and taste.

27. (Previously presented) The method of claim 1, wherein the method further comprises correlating the output distribution with processing conditions.

28. (Previously presented) The method of claim 27, wherein processing conditions are selected from the group consisting of the source of a component, flavor potential, and shelf-life.

29. (Previously presented) The testing method of claim 14, wherein the at least one known organoleptic property is selected from the group consisting of smell, texture, and taste.

30. (Previously presented) The testing method of claim 14, wherein the method further comprises correlating the output distribution with processing conditions.

31. (Previously presented) The testing method of claim 30, wherein processing conditions are selected from the group consisting of the source of a component, flavor potential, and shelf-life.